

In the Claims:

B 1. (Currently Amended) A composition for accelerating in vivo oxidation of alcohol, the composition comprising (i) NAD^+ and a catalyst comprising at least one of a species selected from the group consisting of ~~including at least one of~~ a multivalent transition metal ion, and a complex thereof; the species being in a state selected to accelerate in vivo oxidation of alcohol in the absence of a dehydrogenase where said catalyst effects the oxidation of alcohol, thus recycling NAD^+ .

2. (Currently Amended) The composition of Claim 1, the transition metal ion being selected from ~~a~~ the group ~~including~~ consisting of the elements of Groups IVa through VIII of the Periodic Table.

3. (Currently Amended) The composition of Claim 1, the species comprising one of a group selected from the group consisting of: vanadyl sulfate; potassium ferricyanide; ammonium iron (III) citrate; ammonium molybdate; ammonium phospho molybdate; sodium tungstate; sodium phospho tungstate; ammonium manganese (III) sulfate; zirconium (IV) EDTA; niobium (IV) EDTA; tetrakis(tropolinato) niobium (V) chloride; tetrakis(tropolinato) tantalum (V) chloride; cobalt (III) hexamine chloride; and chromium (III) picolinate.

4. (Original) The composition of Claim 1 having a sufficient quantity of the transition metal ion to provide an in vivo concentration of the ion in the range 0.05% to 2% of a maximum in vivo molar concentration of ethanol.

5. (Original) The composition of Claim 1 having a quantity of NAD^+ sufficient to provide an in vivo concentration of NAD^+ in the range 0.05% to 5% of a maximum in vivo molar concentration of ethanol.

6. (Currently Amended) The composition of Claim 1 further comprising also a base.

7. (Original) The composition of Claim 6, having a quantity of the base sufficient to provide an in vivo concentration of the base at least chemically equivalent to acid resulting from the oxidation of the ethanol.

8. (Currently Amended) The composition of Claim 6 wherein the base ~~includes one of~~ selected from the group consisting of sodium carbonate, sodium bicarbonate, trisodium phosphate, disodium hydrogen phosphate and tris(hydroxymethyl)-aminomethane.

9. (Currently Amended) The composition of Claim 1, further comprising an agent reactive with acetaldehyde.

10. (Currently Amended) The composition of Claim 9, the reactive agent being selected from ~~a~~ the group including consisting of lysine, arginine, thiamine, and pyridoxamine.


11. (Currently Amended) The composition of Claim 9 having a quantity of the reactive agent sufficient to provide an in vivo concentration of the reactive agent at least chemically equivalent to an amount of acetaldehyde resulting from the oxidation of alcohol.

12. (Original) The composition of Claim 9, the reactive agent being a dehydrogenase.

13. (Currently Amended) The composition of Claim 12, the dehydrogenase being selected from the group consisting ~~comprising one of~~ alcohol dehydrogenase and acetaldehyde dehydrogenase.

14. (Currently Amended) The composition of Claim ~~9~~ 12 wherein the dehydrogenase has a concentration in the range 0.1 and 10 I. U./L.

15. (Currently Amended) The composition of Claim 1 further including an accelerant.



16. (Currently Amended) The composition of Claim 15, the accelerant being selected from ~~a~~ the group including consisting of adenosine 5'-triphosphate, adenine-9- β -D-arabinofuranside 5'-triphosphate, 2'-deoxyadenosine 5'-triphosphate, and 2',3'-dideoxyadenosine 5'-triphosphate.

17. (Original) The composition of Claim 15, the accelerant being selected from a group including fructose, arabinose, ribose, deoxyribose, and their phosphorylated derivatives.

18. (Original) The composition of Claim 15, having a quantity of the accelerant sufficient to provide an in vivo concentration in the range from 1% to 100% of a maximum in vivo molar concentration of ethanol.

19. (Currently Amended) The composition of Claim 1, further including a charge-transfer agent.

20. (Currently Amended) The composition of Claim 19, the charge-transfer agent being selected from ~~a group including~~ the group consisting of an isoflavanone and a pyranoside thereof.

21. (Original) The composition of Claim 20, wherein the isoflavanoid is daidzein and its pyranoside is aloin.

22. (Currently Amended) ~~The composition of Claim 19, the charge-transfer agent being selected from a group including~~ the group consisting of methoxatin, pyridoxine, pyridoxamine, pyridoxamine phosphate and thiamine.

23. (Original) The composition of Claim 19 having a quantity of the charge-transfer agent sufficient to provide an in vivo concentration of the charge-transfer agent in the range from 0.1% and 2% of a maximum in vivo molar concentration of ethanol.

24. (Currently Amended) The composition of Claim 1, further comprising a surfactant.

25. (Original) The composition of Claim 24, the surfactant being selected from a group including saponin, taurine, oleic acid and lecithin.

26. (Original) The composition of Claim 24, the concentration of the surfactant being in the range 0.02% and 0.2% by volume.

27. (Original) The composition of Claim 24, wherein the surfactant is also a charge-transfer agent.


28. (Currently Amended) The composition of Claim 27, wherein the surfactant and charge-transfer agent is selected from ~~a group including~~ the group consisting of lipoic acid, retinoic acid, retinal, retinol, and derivatives and analogs thereof.

29. (Original) The composition of Claim 27, having a quantity of the surfactant and charge-transfer agent sufficient to provide an in vivo concentration of the surfactant and charge-transfer agent between 0.1% and 2% of a maximum molar concentration of ethanol.

30. (Currently Amended) The composition of Claim 12, ~~further including a~~ stabilizing ion.

31. (Original) The composition of Claim 30, the stabilizing ion being zinc.

32. (Original) The composition of Claim 31, the concentration of zinc ions being 1% the molar concentration of the dehydrogenase.

 33. (Currently Amending) The composition of Claim 1, having also a dietary composition selected from ~~a group including~~ the group consisting of garlic oil, onion oil and dietary fiber.

34. (Original) The composition of Claim 1, having also a medication.

35. (Currently Amended) The composition of Claim 34, the medication being a pain-relief agent selected from ~~a group including~~ the group consisting of aspirin, ibuprofen and acetaminophen.

36. (Currently Amended) The composition of Claim 1, being configured in a form selected from ~~a group including~~ the group consisting of a solution, suspension, capsule, gel caplet, transdermal patch, and nasal spray.

37. - 41. (Cancelled).

42. (Currently Amended) A composition for accelerating in vivo oxidation of alcohol, the composition comprising NAD^+ and one of vanadyl sulfate ~~and~~ or a complex of vanadyl sulfate.

43. (Currently Amended) The composition of Claim 42, further comprising a species selected from the group consisting of a multivalent transition metal ion and a complex thereof, the transition metal being selected from ~~a group including~~

~~the group consisting of the elements of Groups IVa through VIII of the Periodic Table.~~

44. (Currently Amended) The composition of Claim 43, ~~the species comprising one of a group selected from wherein the species is selected from the group consisting of:~~ potassium ferricyanide; ammonium iron (III) citrate; ammonium molybdate; ammonium phospho molybdate; sodium tungstate; sodium phospho tungstate; ammonium manganese (III) sulfate; zirconium (IV) EDTA-; niobium (IV) EDTA; tetrakis(tropolinato) niobium (V) chloride; tetrakis(tropolinato) tantalum (V) chloride; cobalt (III) hexamine chloride; and chromium (III) picolinate.

45. (Previously Presented) The composition of Claim 42 having a sufficient quantity of the transition metal ion to provide an in vivo concentration of the ion in the range 0.05% to 2% of a maximum in vivo molar concentration of ethanol.

46. (Previously Presented) The composition of Claim 42 having a quantity of NAD⁺ sufficient to provide an in vivo concentration of NAD⁺ in the range 0.05% to 5% of a maximum in vivo molar concentration of ethanol.


47. (Currently Amended) The composition of Claim 42 further comprising also a base.

48. (Previously Presented) The composition of Claim 47, having a quantity of the base sufficient to provide an in vivo concentration of the base at least chemically equivalent to acid resulting from the oxidation of the ethanol.

49. (Currently Amended) The composition of Claim 47 wherein the base includes one of sodium carbonate, sodium bicarbonate, trisodium phosphate, disodium hydrogen phosphate and or tris(hydroxymethyl)-aminomethane.

50. (Currently Amended) The composition of Claim 42, further comprising an
agent reactive with acetaldehyde.

51. (Currently Amended) The composition of Claim 50, the reactive agent
being selected from ~~a group including~~ the group consisting of lysine, arginine,
thiamine, and pyridoxamine.

 52. (Previously Presented) The composition of Claim 50 having a quantity of
the reactive agent sufficient to provide an in vivo concentration of the reactive
agent at least chemically equivalent to an amount of acetaldehyde resulting from
the oxidation.

53. (Previously Presented) The composition of Claim 50, the reactive agent
being a dehydrogenase.

54. (Currently Amended) The composition of Claim ~~54~~ 53, the dehydrogenase
is acetaldehyde dehydrogenase.


55. (Currently Amended) The composition of Claim ~~54~~ 53, wherein the
dehydrogenase has a concentration in the range 0.1 and 10 I. U./L.

56. (Previously Presented) The composition of Claim 42, further including an
accelerant.

57. (Currently Amended) The composition of Claim ~~57~~ 56, the accelerant
being selected from ~~a group including~~ the group consisting of adenosine 5'-
triphosphate, adenine-9- β -D-arabinofuransoside 5'-triphosphate, 2'-
deoxyadenosine 5'-triphosphate, and 2',3'-dideoxyadenosine 5'-triphosphate.

58. (Currently Amended) ~~The composition of Claim 57 56, the accelerant~~
being selected from ~~a group including the group consisting of~~ fructose,
arabinose, ribose, deoxyribose, and their phosphorylated derivatives.

59. (Currently Amended) The composition of Claim ~~57 56~~, having a quantity of
the accelerant sufficient to provide an in vivo concentration in the range from 1%
to 100% of a maximum in vivo molar concentration of ethanol.

 60. (Currently Amended) The composition of Claim 42, further including a
charge-transfer agent.

61. (Currently Amended) The composition of Claim ~~64 60~~, the charge-transfer
agent being selected from the group consisting of an isoflavanone and a
pyranoside thereof.

62. (Currently Amended) The composition of Claim ~~62 61~~, wherein the
isoflavanoid is daidzein and the pyranoside thereof is aloin.

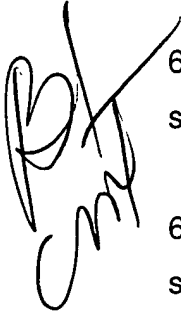
63. (Currently Amended) The composition of Claim ~~64 60~~, the charge-transfer
agent being selected from the group consisting of methoxatin, pyridoxine,
pyridoxamine, pyridoxamine phosphate and thiamine.

64. (Currently Amended) The composition of Claim ~~64 60~~ having a quantity of
the charge-transfer agent sufficient to provide an in vivo concentration of the
charge-transfer agent in the range from 0.1% and 2% of a maximum in vivo
molar concentration of ethanol.

65. (Previously Presented) The composition of Claim 42, further comprising a
surfactant.

66. (Currently Amended) ~~The composition of Claim 66 65,~~ the surfactant being selected from the group consisting of saponin, taurine, oleic acid and lecithin.

67. (Currently Amended) The composition of Claim ~~66~~ 65, the concentration of the surfactant being in the range 0.02% and 0.2% by volume.

 68. (Currently Amended) The composition of Claim ~~66~~ 65, wherein the surfactant is also a charge-transfer agent.

69. (Currently Amended) The composition of Claim ~~69~~ 68, wherein the surfactant and charge-transfer agent is selected from the group consisting of lipoic acid, retinoic acid, retinal, retinol, and derivatives and analogs thereof.

70. (Currently Amended) The composition of Claim ~~69~~ 68, having a quantity of the surfactant and charge-transfer agent sufficient to provide an in vivo concentration of the surfactant and charge-transfer agent between 0.1% and 2% of a maximum molar concentration of ethanol.

71. (Currently Amended) The composition of Claim 42, further including a stabilizing ion.


72. (Currently Amended) The composition of Claim ~~72~~ 71, the stabilizing ion being zinc.

73. (Currently Amended) The composition of Claim ~~73~~ 72, the concentration of zinc ions being 1% of the molar concentration of ~~the~~ a dehydrogenase.

74. (Currently Amended) The composition of Claim 42, further comprising a dietary composition selected from the group consisting of garlic oil, onion oil and dietary fiber.

75. (Previously Presented) ~~The composition of Claim 42, further comprising a~~
medication.

76. (Currently Amended) The composition of Claim ~~76~~ 75, the medication being a pain-relief agent selected from the group consisting of aspirin, ibuprofen and acetaminophen.

 77. (Currently Amended) The composition of Claim 42, being configured in a form selected from ~~a~~ the group including consisting of a solution, a suspension, a capsule, a gel caplet, a transdermal patch and a nasal spray.

78. (Withdrawn) A composition for accelerating in vivo oxidation of alcohol, the composition comprising NAD^+ and one of acetaldehyde dehydrogenase and alcohol dehydrogenase.

79. (Currently Amended) A composition for accelerating in vivo oxidation of alcohol, the composition comprising NAD^+ , and one of acetaldehyde dehydrogenase and alcohol dehydrogenase an agent reactive with alcohol ~~Claim 79, and further comprising one of~~ a multivalent transition metal ion ~~and or~~ a complex thereof, the transition metal being selected from a group including the elements of Groups IVa through VIII of the Periodic Table.

80. (Currently Amended) The composition of Claim 79, further comprising ~~one~~ of a multivalent transition metal ion ~~and or~~ a complex thereof, selected from the group consisting of potassium ferricyanide; ammonium iron (III) citrate; ammonium molybdate; ammonium phospho molybdate; sodium tungstate; sodium phospho tungstate; ammonium manganese (III) sulfate; zirconium (IV) EDTA; niobium (IV) EDTA; tetrakis(tropolinato) niobium (V) chloride; tetrakis(tropolinato) tantalum (V) chloride; cobalt (III) hexamine chloride; or chromium (III) picolinate.

81. ~~(Previously Presented) The composition of Claim ~~80~~ 79~~ having a sufficient quantity of the transition metal ion to provide an in vivo concentration of the ion in the range 0.05% to 2% of a maximum in vivo molar concentration of ethanol.

82. (Previously Presented) The composition of Claim 79 having a quantity of NAD⁺ sufficient to provide an in vivo concentration of NAD⁺ in the range 0.05% to 5% of a maximum in vivo molar concentration of ethanol.

83. (Previously Presented) The composition of Claim 79 comprising also a base.

84. (Currently Amended) The composition of Claim ~~84~~ 83, having a quantity of the base sufficient to provide an in vivo concentration of the base at least chemically equivalent to acid resulting from the oxidation of the ethanol.

85. (Currently Amended) The composition of Claim ~~84~~ 83 wherein the base includes one of sodium carbonate, sodium bicarbonate, trisodium phosphate, disodium hydrogen phosphate and tris(hydroxymethyl)-aminomethane.

86. (Previously Presented) The composition of Claim 79, comprising an agent reactive with acetaldehyde.

87. (Currently Amended) The composition of Claim ~~87~~ 86, the reactive agent being selected from a group including lysine, arginine, thiamine, and pyridoxamine.

88. (Currently Amended) The composition of Claim ~~87~~ 86 having a quantity of the reactive agent sufficient to provide an in vivo concentration of the reactive agent at least chemically equivalent to an amount of acetaldehyde resulting from the oxidation.

89. (Previously Presented) The composition of Claim 79, wherein the dehydrogenase has a concentration in the range 0.1 and 10 I. U./L.

90. (Previously Presented) The composition of Claim 79, further including an accelerant.

91. (Currently Amended) The composition of Claim 94 90, the accelerant being selected from a group including adenosine 5'-triphosphate, adenine-9- β - D-arabinofurasnoside 5'-triphosphate, 2'-deoxyadenosine 5'-triphosphate, and 2',3'-dideoxyadenosine 5'-triphosphate.

92. (Currently Amended) The composition of Claim 94 90, the accelerant being selected from a group including fructose, arabinose, ribose, deoxyribose, and their phosphorylated derivatives.

93. (Currently Amended) The composition of Claim 94 90, having a quantity of the accelerant sufficient to provide an in vivo concentration in the range from 1% to 100% of a maximum in vivo molar concentration of ethanol.

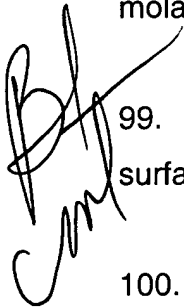
94. (Previously Presented) The composition of Claim 79 including a charge-transfer agent.

95. (Currently Amended) The composition of Claim 95 94, the charge-transfer agent being selected from the group consisting of an isoflavanone and a pyranoside thereof.

96. (Currently Amended) The composition of Claim 96 95, wherein the isoflavanone is daidezin and the pyranoside thereof is aloin.

97. (Currently Amended) ~~The composition of Claim 95-94,~~ the charge-transfer agent being selected from the group consisting of methoxatin, pyridoxine, pyridoxamine, pyridoxamine phosphate and thiamine.

98. (Currently Amended) The composition of Claim 95 94 having a quantity of the charge-transfer agent sufficient to provide an in vivo concentration of the charge-transfer agent in the range from 0.1% and 2% of a maximum in vivo molar concentration of ethanol.

 99. (Previously Presented) The composition of Claim 79, further comprising a surfactant.

100. (Currently Amended) The composition of Claim ~~400~~ 99, the surfactant being selected from the group consisting of saponin, taurine, oleic acid and lecithin.

101. (Currently Amended) The composition of Claim ~~400~~ 99, the concentration of the surfactant being in the range 0.02% and 0.2% by volume.

102. (Currently Amended) The composition of Claim ~~400~~ 99, wherein the surfactant is also a charge-transfer agent.


103. (Previously Presented) The composition of Claim 79, including a stabilizing ion.

104. (Currently Amended) The composition of Claim ~~404~~ 103, the stabilizing ion being zinc.

105. (Currently Amended) The composition of Claim ~~405~~ 104, the concentration of zinc ions being 1% the molar concentration of the dehydrogenase.

~~106. (Previously Presented) The composition of Claim 79, further comprising a~~
dietary composition selected from the group consisting of garlic oil, onion oil and
dietary fiber.

107. (Previously Presented) The composition of Claim 79, further comprising a
medication.

 108. (Previously Presented) The composition of Claim 79, the medication being
a pain-relief agent selected from the group consisting of aspirin, ibuprofen and
acetaminophen.

109. (Previously Presented) The composition of Claim 79, being
configured in a form selected from a group including a solution, a
suspension, a capsule, a gel caplet, a transdermal patch and a nasal
spray.